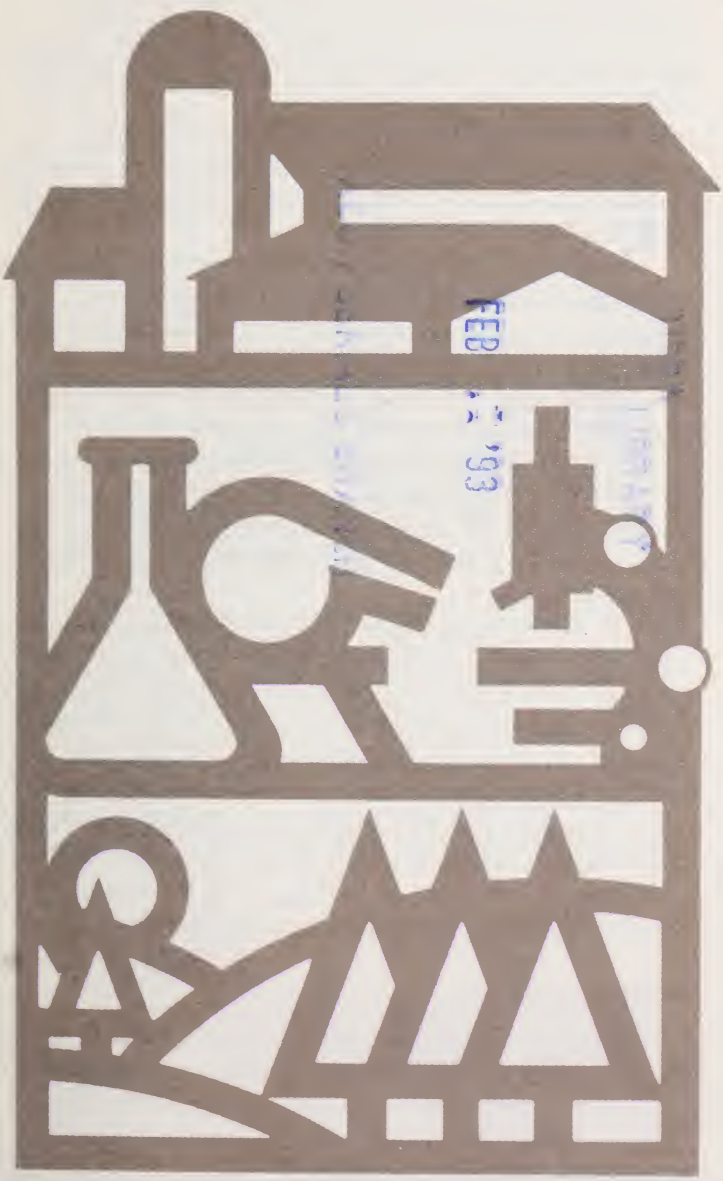
The State Agricultural Experiment Stations and Research for Agriculture—

An Investment To Feed The Nation And The World



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The State Agricultural Experiment Stations and Research for Agriculture

The State agricultural experiment stations have an outstanding record of helping American agriculture meet our Nation's food and fiber needs—and those of the rest of the world. Research accomplishments at these stations help farmers minimize losses from pests and diseases, cope with changing market conditions, and increase productivity and production efficiency while conserving energy.

As a result of these efforts, America's consumers have benefited enormously through bountiful food and fiber supplies. In addition, our agricultural surpluses sold overseas are a major factor in stabilizing our balance of foreign trade payments.

The challenges that face our food and fiber supply—here and around the world—are more demanding today than ever. And the solutions rest largely with a strong agricultural research system.

The State agricultural experiment stations are a vital part of our State-Federal agricultural research system. They conduct about 60 percent of the publicly supported agricultural research in the United States. Scientists at the stations are involved in some 11,000 research projects. The equivalent of about 6,600 full-time scientists carry out these projects.

American agriculture is highly diverse. Research to aid agriculture and help solve its problems often must take conditions in specific locations into account. So researchers are located where they can be familiar with these location-specific differences.

Most of the research is conducted by State experiment station staffs, which are affiliated with State land-grant universities. The stations receive most of the State and a substantial part of the Federal funds for agricultural and forestry research. Also part of the State research system are the schools of forestry, the colleges of veterinary medicine, the schools of home economics, the land-grant colleges of 1890, and Tuskegee Institute. Many of these organizations are part of the experiment station in their state and also receive Federal funding for their research programs.

Research Locations

Each State has an agricultural experiment station whose location is determined by the State legislature. The station is generally located at the State's land-grant university, but stations usually have several research locations. Branch stations and substations make it possible for research specific to a particular production area to be conducted on the spot.

These research units have a statewide responsibility for agricultural and forestry research in a broad sense—includ-

ing research in human nutrition, natural resources, plant sciences, animal science, and the social sciences.

Altogether, there are 58 State agricultural experiment stations—one in each State, the District of Columbia, Guam, the Virgin Islands, Puerto Rico, Micronesia, and American Samoa; New York and Connecticut each have two stations.

Legislation for Federal Funding

Although appropriations by State legislatures are the principal source of funding for most State experiment station research—over 80 percent nationally—Federal funds provide a solid base of financing essential for maintaining high-quality research programs in agriculture and forestry. The Cooperative State Research Service (CSRS), an agency of Science and Education, USDA, administers several Federal funding programs to more than 100 State institutions.

CSRS administers two principal acts for allocation of these Federal funds:

- *The Hatch Experiment Station Act* (Public Law 84-352) was passed by Congress in 1887. This act, as amended in 1955, provided for at least one experiment station in each State to conduct research "basic to the problems of agriculture in its broadest aspects . . . (for) the development and improvement of the rural home and rural life and the maximum contribution by agriculture to the welfare of the consumer. . . ."

Hatch Act appropriations are the largest of the Federal funds, the programs it enables are aimed at improving and promoting the efficient production, marketing, distribution, and use of crops and livestock essential to the food supply or health and welfare of Americans.

- *The McIntire-Stennis Cooperative Forestry Research Act* (Public Law 87-788), passed by Congress in 1962, supports forestry research. Over half of the 60 institutions participating

in this program are connected with State agricultural experiment stations.

The stations also participate in other sources of funding administered through CSRS, including:

- Special research grants to finance research on problems Congress believes are of particular importance to the Nation.
- Competitive research grants (competition open to all scientists) to support basic reseach on fundamental phenomena to gain the new knowledge necessary for the continued progress of agriculture.

Federal funds help hold the State agricultural research system together. Nationally, these funds are a modest proportion compared with State support, but they are important to the health and well-being of the State agricultural experiment station system.

Federal funds promote regional and State-Federal cooperation in research. They stimulate research coordination and help avoid duplication.

Scope of Research Programs

Experiment stations concentrate their research efforts on the needs of their particular State; however, the results often are useful across State borders. Scientists in several States may work together on the same agricultural problems—with different approaches, methods, and requirements. Research designed to benefit more than one State is coordinated through regional research programs.

The State experiment station link with the land-grant universities in each State offers researchers many advantages: Station scientists often direct graduate student research and thus help train the agricultural scientists of tomorrow. Most of our Nation's agricultural scientists have gained their knowledge of research procedures because of this association.

Experiment station scientists often teach. Students benefit by receiving firsthand the latest methodology from working scientists. Many scientists have part-time Extension appointments. This combination of research, Extension, and teaching appointments permits States to command more expertise in more specialties on their faculties than otherwise would be possible.

Because station scientists can turn for help and advice to colleagues in many related disciplines, they can more easily develop interdisciplinary research programs.

Being part of the land-grant university affords the experiment station scientists access to facilities and equipment that would be too expensive for a smaller research unit to have,

such as large computer systems and special laboratories.

Link with Extension

Extension and research are closely linked in the land-grant universities. A State-Federal organization—the Cooperative Extension Service (CES)—disseminates the discoveries and developments of experiment station research to the public.

Extension workers also help to keep scientists in touch with the needs and problems of the State. Together, these two units have proved to be a successful combination helping to strengthen the agriculture of each State.

Research Partnership

The State experiment stations are part of a large and effective State-Federal cooperative research partnership. Much effort is expended to foster cooperation and coordination of research at all levels.

For example, the State agricultural experiment stations and USDA's Agricultural Research Service work closely together to serve agriculture. The stations and university forestry schools cooperate with USDA's Forest Service for research in that area.

Research planning begins with individual scientists and their colleagues. They meet with farmers, processors, and consumers. Extension agents and specialists communicate with them. Advisory groups who review station programs also give scientists their opinions. In this way, the scientists realize the needs of the people of their State and region.

In addition, scientists know their own disciplines and what can be accomplished through research. Even then, their

research proposals are reviewed by their peers and by station research administrators.

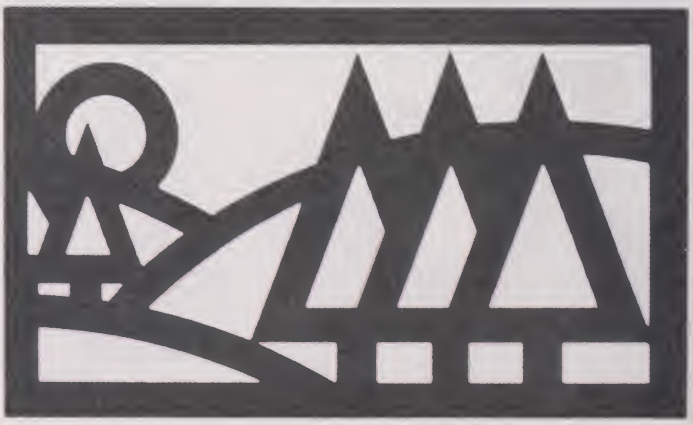
Yearly, scientists and research administrators meet in four regional research planning groups. These groups include members from both the experiment stations and the various Federal agricultural research installations. At these meetings, they identify regional priorities, share research plans for specific problems, and establish areas of cooperation.

Three groups have roles in national agricultural research planning:

- *The Joint Council on Food and Agricultural Sciences.* The Council is composed of Federal and State research administrators in agriculture and forestry and of members of private organizations and groups. The Council provides leadership in establishing national policy in food and agricultural sciences and facilitates planning and coordination.
- *The National Agricultural Research and Extension Users Advisory Board.* The Board, representing consumers and producers and many groups that use and benefit from agricultural research and Extension, advises the Secretary of Agriculture on funding priorities.
- *The National Agricultural Research Committee.* The Committee, under the Joint Council, is comprised of USDA and State research administrators. They accomplish national research planning and review priorities determined by the regional research committees. Their work fosters cooperation between regions.

The experiment station directors have four regional organizations, each with a regional director-at-large to help coordinate station research planning and to help represent the stations at the regional and national levels.

A group that represents the State agricultural experiment stations in all matters is the *Experiment Station Committee on Organization and Policy* (ESCOP). This committee of State



research administrators works on appropriations, priorities, and other important research administration matters.

Cooperative regional research matters, part of the Hatch Act research program, are guided by the *Committee of Nine* —eight experiment station directors and one home economics research administrator. This body, established by the Hatch Act, recommends regional research projects and fund allocations, and in general advises on cooperative regional research matters.

The stations also have a special interregional project—IR-6—to encourage and aid planning and evaluation efforts within and among States and regions, and between the States and the Federal research organizations.

Individual local and State advisory groups—both formal and informal—complement this structure for coordination and planning by advising scientists and research administrators about their research needs. These include commodity advisory boards and consumer and industry groups.

Professional and scientific societies and their journals are primary outlets for research reporting. The journals provide forums for presenting research to peers, as do workshops and symposia where research in all its aspects is examined and discussed.

This State-Federal research partnership takes strength from its direct access to people and their problems, and their ability to respond to those needs. The system is open to the influence of science, the public, and a wide variety of groups with research needs. Because the scientists are located where the agricultural problems exist the resultant research stays close to the users of research—perhaps closer than any other area of nationally funded research and development.

Research: Cornerstone of Productivity

Americans benefit from agricultural research through a supply of food that is more plentiful and takes a smaller proportion of consumer disposable income than in most any other nation.

Studies have shown that the payoff from agricultural research provides annual returns as high as 30 to 50 percent per dollar invested.

The Nation is increasingly dependent on production agriculture. We are today reaping the harvest from research findings and developments of the late sixties and seventies—and even before. The knowledge and technology for the decade or more ahead is being discovered now. The American public—and its representatives—can take pride in the benefits they receive from agricultural research.

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